The red color is of considerable help in finding the piece if it is dropped.

This latter point was found to be of practical importance last fall when, on a deer hunt, I ran into a bees' nest and suffered multiple stings, to which I am moderately allergic. Use was made of the six cups in the three outfits which my companions and I carried, and after an hour or so I made my way back to camp with the suckers still applied. From time to time one would be knocked off, and as we were in rough, brushy country, it would have been very difficult to locate except for the red color.

As to accessories the ideal tourniquet would be a rubber band, as the object is not to stop venous flow but to stop lymph return. Unfortunately, rubber bands break unexpectedly, particularly when not fresh. The next most effective tourniquet would be a large handkerchief, but this would be too bulky to include in a compact kit. A piece of soft linen braid seemed the best compromise and was included. A vial of antiseptic and a lancet were also included.

Summary: A suction snake-bit kit is described in which the suction cups when not in use form a compact capsule container for accessories.

Fourth and Parker Streets.

AIRCRAFT AS DISEASE CARRIERS

By HAROLD L. SCHLOTTHAUER, M. D.
Tehachapi

THE great increase in flying has frequently raised the question as to the possibility of transmission by aircraft of diseases and disease-bearing insects over large areas. This possibility was directed to my attention by four unusual cases following within a period of a few weeks the arrival at Muroc of a group of military planes reported to have come directly from South America by way of Panama. These were cases of acute illness produced by the bite of an insect previously unknown to the residents of the Mojave Desert.

REPORT OF CASES

CASE 1.—G. M. White, male, age one year. Was bitten on an arm and a leg while lying in its crib during the early evening hours, and within one-half hour the patient's body was covered with urticarial wheals. After one hour the axillary temperature was 103 degrees Fahrenheit. Hot magnesium sulfate compresses were applied to the site of the bites which, in twelve hours, were greatly swollen. For three days the temperature remained near 103 degrees, the tongue was swollen, and the child was very lethargic. On the fourth day the temperature returned to normal and the manifestations of allergy disappeared, but the lethargy remained for two weeks. The local lesions became chronic ulcers, which healed in about three months.

CASE 2.—J. H. White, female, age 34, housewife. Was bitten on the right hand while in bed at night. The immediate symptoms were dyspnea, headache, vomiting, fever (102 degrees) and generalized urticaria, which persisted for over two hours. The following morning the patient was normal except for marked swelling of the affected hand, which subsided in three days.

CASE 3.—B. J. H. White, female, age 9. Was bitten on the right cheek at 1 a. m. while asleep in bed. She was immediately seized with vomiting, headache, fever, and a generalized urticaria. After about one-half hour she became lethargic and could be awakened only with difficulty. By morning the symptoms had subsided. The affected cheek remained swollen for three days.

CASE 4.—M. H. White, female, age 65, housewife. Was bitten on the arm at 7 p. m. while sitting on a chair under a tree in her yard. She immediately became nauseated, developed a fever (102 degrees), chills, and generalized urticaria. The tongue was swollen and made talking nearly impossible. The immediate symptoms disappeared gradually after two hours except for the fever, which persisted for two days. The site of the bite on the arm was swollen and painful for one week.

COMMENT

Specimens of these insects were taken, some while in the act of biting, and sent to Dr. W. B. Herms, head of the Department of Entomology and Parasitology of the University of California, for identification. He found them to be *Paratriatoma hirsutus* Barber, recently described members of a family of blood-sucking, cone-nose, many of which are vectors of Chaga's disease or American trypanosomiasis, most commonly seen in South America. The cases cited, however, have no resemblance to Chaga's disease. After observation for approximately one year, these patients have shown no further symptoms and no demonstrable pathology. No more of the insects have been found.

115 E Street.

HIGH VITAMIN THERAPY FOR THE RELIEF OF TIC DOULOUREUX

By EDWARD MATZGER, M. D.
San Francisco

THE original clinical research of Dr. Henry Borsook, professor of biochemistry at the California Institute of Technology, for the treatment of tic douloureux[1] was so brilliant and conclusive that I took advantage of the opportunity to use it on two patients.

The "Borsook technique" is: To commence treatment with daily intravenous injections of 10 milligrams of thiamin chlorid. This is supplemented by 7½ to 10 U. S. P. units of liver extra intramuscularly, three times weekly. In addition, we prescribe 6 drams of the rice bran extract, marketed by Galen Company of Berkeley, California. This material contains the whole B complex and affords 200 I. U. of B_1 to the dram. The patients are placed on high vitamin low carbohydrate diet, and are asked to supplement the A and D intake by taking one of the fish-liver oils in moderate amounts. The latter is perhaps not necessary, but it gives a better balance.

We find that progress is very slow. There may be no significant reduction in pain for two or three months. For those patients who show no response in three months, we increase the dose of thiamin chlorid to 100 milligrams daily. Treatment is continued in all cases until the patient is free of pain for two months. The daily injections are then

1 J. A. M. A. in press.

tapered off by giving, first, three a week, then two a week, then one a week, over the course of several months. Even after that relapses may occur, but these usually respond to short periods of intensive treatment."

I have modified this in that I secure adequate vitamin A intake by having the patients take a can of S & W carrot juice three times a week. (S & W contains 24,000 units of vitamin A per can.)

REPORT OF CASES

CASE 1.—Mrs. J. H., age 59. Has had typical tic douloureux symptoms on the right side of her face since 1932; pain under right eye, angle of mouth, and temple. The character of the pain is sharp, and shooting pains recur at very frequent intervals. She had four alcohol injections: the first one, in 1933, was followed by eighteen months' partial relief; the second injection, in 1935, with less than six months' partial relief; the third, in 1937, and the fourth, in 1938, with no relief of pain, although there was an annoying anesthesia. On February 2, 1939, I started in with the "Borsook technique" and there was continuous improvement from the start. In June, July, and August there was a complete cessation of pain, and the patient discontinued treatment. Within a week from the beginning of the treatment she experienced a feeling of well-being, had increased appetite, normal bowel movements, and abundant energy. She was able to eat without pain, and thought she was entirely cured. There was a relapse, however, in November, 1939, which responded slowly to additional therapy. While she is not completely free of pain now, life is bearable, and there are no further thoughts of suicide.

* * *

CASE 2.—Mr. W. W. P., age 59. Atypical bilateral neuritis with muscular twitching. Onset, twelve years ago. Trigger area was on left side of lower lip, and pressure or cold wind, or eating or talking, would cause shocks of pain, radiating from trigger area to temple. Totally incapacitated since 1934. The right side was injected in November, 1938, with only two months' relief of right-sided pain. The patient came in for treatment on June 2, 1939, and under the "Borsook technique" was progressively better until 100 per cent relief of pain was secured in August of 1939. Since this period he has remained symptom-free on "Galen B" by mouth alone, and the twitching is greatly diminished. Last examined on February 1, 1940, and has suffered no relapses.

COMMENT

This high vitamin regimen has relieved the pain of tic douloureux in these two patients, and has banished thoughts of suicide from one patient (Mrs. J. H.), and made life worth living for the other. In addition to the relief of pain, there was a marked improvement in general health and nutrition. This second feature was so striking that I have used this identical technique in the treatment of other groups of patients. These findings will be reported later.

909 Hyde Street.

FURUNCLES AND CARBUNCLES*

By JOHN BLEMER, M. D.
Danville

IN a general practice there is occasion to treat many cases of furuncles and carbuncles. Not believing in the immediate incision method of treatment for these infections, an ultra-violet light routine has been used for the past six or seven years, and has brought about the discard of the scalpel and excellent results. In consideration of the degree of pain and length of time required for recovery, it makes for fewer dressings and less loss of time as well as less danger of spread of infection or resultant scarring than results from crucial, stellate or other types of incisions.

There are all gradations of furuncles and carbuncles, depending upon the site and previous treatment before seen by the physician. In considering the carbuncle as most severe, it is usual that hot compresses or home-remedy poultices have been applied and the area has "come to a head," but is not fluctuant. Immediately it is washed with an alcohol swab and exposed to ultra-violet light at a distance of 10 to 14 inches for two or three minutes. The surrounding area must be protected with toweling and the light directly centered over the carbuncle. Care must be taken to prevent harsh or unnecessary erythema. Following the exposure a salve, composed of ergot, 10½ grains, phenol, 7½ grains, zinc oxid 22½ grains in a suitable base, is applied with a sterile gauze dressing. Usually two of these treatments are sufficient to soften the entire area, and the central cores are easily picked out with sterile forceps. Any bleeding from the surrounding skin or central core is an indication to stop removal of necrotic tissue. During the next few days the area drains and heals. Dry dressings are changed daily while the drainage is present. The simpler furuncles may be quickly aborted following this routine. Following are a few of the typical cases treated in the past two years:

Name	*Diagnosis*	*Number of Treatments*	*Exposure in Minutes*	*Results*
B. R.	Furuncle, neck	3	3	Cured
B. O.	Furuncle, neck	2	2.5	Cured
R. L.	Furuncle, forearm	4	4	Cured
E. L.	Furuncle, thigh	3	4	Cured
M. J.	Furuncle, cheek	2	3	Cured
E. I.	Furuncle, arm	3	3	Cured
E. R.	Furuncle, elbow	2	3	Cured
A. L.	Furuncle, abdomen	3	2.5	Cured
A. K.	Furuncle, jaw	3	4	Cured
M. I.	Furuncle, forearm	3	5	Cured
M. F.	Furuncle, abdomen	2	2.5	Cured
C. E.	Furuncle, neck	3	4.5	Cured
M. C.	Furuncle, wrist	2	4	Cured
E. S.	Furuncle, hand	2	4	Cured
W. C.	Furuncle, upper lip	5	2.5 or 3	Cured
J. C.	Furuncle, lip and chin	6	2.5 to 8 min.	Cured
W. M.	Furuncle, upper lip	2	3	Cured
F. M.	Carbuncle, neck	4	4	Cured
A. G.	Carbuncle, neck	5	4	Cured
J. J.	Carbuncle, thigh	4	4 to 8	Cured
E. K.	Carbuncle, neck	5	5	Cured

COMMENT

In the past few years there has been produced a thin window bactericidal lamp, combining ultra-violet and infra-red qualities. This type of lamp eliminated the very objectionable features of the old quartz mercury lamp by limitation of the burning effect on the skin. The strong radiation of the thin window lamp in the bactericidal range of ultra-violet allows close approximation to the skin for much longer periods of exposure without danger of blistering or burning. This type of lamp has been used in my office routine the past three months, and its superior qualities over the older treatment are shown by the following cases.

* A comparative study of the treatment of furuncles and carbuncles by ultra-violet light, and the thin window bactericidal lamp.